

Carbon Monoxide Maintenance Plan Greeley

Technical Support Document

Emission Inventory



December 17, 2009

Colorado Department of Public Health and Environment
Air Pollution Control Division
4300 Cherry Creek Drive South
Denver, Colorado 80246

Table of Contents

1. EMISSION INVENTORY METHODOLOGY.....	1
2. 2007 EMISSION INVENTORY SUMMARY	2
3. REFERENCES.....	3



1. Emission Inventory Methodology

The Air Pollution Control Division (APCD) developed the 2007 emission inventories in the "Carbon Monoxide Maintenance Plan for Greeley" using U.S. Environmental Protection Agency (EPA) approved emissions modeling methods, including EPA's MOBILE6 model and local VMT data for on-road mobile source emissions, EPA's non-road model, local demographic information for area and off-road sources, and reported actual emissions for point sources. The inventory represents average daily winter emissions. The MOBILE6 and non-road model inputs represent these average daily winter conditions. Heating and wood burning emissions were apportioned from annual emission estimates by heating degree day data from the Western Regional Climate Center. Other source categories were apportioned from annual to daily by dividing by 365.

Highway mobile source emissions are from the EPA model MOBILE6, an emission factor model for predicting gram per mile emissions of Hydrocarbons (HC), Carbon Monoxide (CO), Nitrogen Oxides (NOx), Carbon Dioxide (CO₂), Particulate Matter (PM), and toxics from cars, trucks, and motorcycles under various conditions.

Non-road source emissions are from the EPA Non-Road Model. This model includes the impact of future controls on non-road engines, which is used in equipment such as lawn and garden equipment and construction equipment.

Area source emissions (including heating, construction, railroads, etc.) are from the 2002 EPA National Emissions Inventory (NEI) and grown to 2007 by population growth from data from the State. For more documentation for these categories, refer to the NEI documentation (EPA, 2008).

Under Air Quality Control Commission Regulation No. 3, the APCD requires any source that emits two tons per year or greater to submit an Air Pollutant Emission Notice (APEN) (APCD, 2008). This means that sources that emit less than two tons per year are not necessarily accounted for in an emissions inventory. The point source emissions for Greeley were obtained from this tracking system. The emission estimates are made using a variety of methodologies. Data from source-specific emission tests, or continuous emission monitors are preferable, but not always available. The EPA has developed a variety of emission factors to estimate emissions as well. Emission factors are frequently the best or only method available for estimating emissions.

Oil and Gas Emissions (O&G area and O&G point) from oil and gas exploration and development sources are based on the 2006 and 2010 Independent Petroleum Association of Mountain States (IPAMS) Inventory and the Norwest Corporation Study of oil and gas growth from 2010 to 2020 for the DJ Basin.

2. 2007 Emission Inventory Summary

This section presents the 2007 emission inventories for the maintenance plan.

Table 1. 2007 CARBON MONOXIDE Emission Inventory (tons per day).

Inventory Summary		CO (Tons/Day)
	Biogenic	0.00
	Commercial Cooking	0.05
	Fuel Combustion	0.55
	Highway Vehicles	55.36
	Non O&G Point Sources	0.58
	Non-Road	17.81
	O&G area	0.02
	O&Gpoint	0.03
	Railroads	0.04
	Structure Fires	0.03
	Woodburning	6.75
	TOTAL	81.23
Non O&G Point Sources		
site id	facility n	
0018	SWIFT BEEF COMPANY	0.05
0055	NORTHERN CO MEDICAL CTR	0.01
0086	NORTHERN CO CREMATORY INC	0.00
0126	THERMO POWER & ELEC INC	0.04
0150	SCHULTE INVESTMENTS (WAS ELSRO INC)	0.00
0322	CITY OF GREELEY WATER POLLUT CONTROL FAC	0.00
0395	MEADOW GOLD DAIRY	0.01
0412	THERMO GREELEY INC	0.27
0426	LAFARGE WEST, INC. - 35TH AVE PLANT	0.06
0494	UNIV OF NORTHERN COLORADO	0.10
0556	HUMANE SOCIETY OF WELD COUNTY	0.00
5153	AGGREGATE INDUSTRIES - WCR, INC.	0.03
	TOTAL	0.58

3. References

- APCD, 2008. Air Quality Control Commission Regulation Number 3. Stationary Source Permitting and Air Pollutant Emission Notice Requirements. 5 CCR 1001-5.
< <http://www.cdphe.state.co.us/regulations/airregs/100103stationarysourcepermitting.pdf> >
- U.S. EPA, 2008. "2002 National Emissions Inventory Data & Documentation."
< <http://www.epa.gov/ttn/chief/net/2002inventory.html#documentation> >

